

IN THE SPECIFICATION:

Kindly replace the Title with following:

“An Algorithm for Coding Coefficients Utilizing Calculations Cost”

Kindly replace paragraph [0004] with the following:

[0004] Scalability means, inter alia, that quality can be exchanged with algorithm complexity or computational power: a loss of quality can be accepted ~~excepted~~-in exchange for a reduction in algorithm complexity or computational power, vice versa.

Kindly replace paragraph [0009] with the following:

[0009] According to an advantageous embodiment, in addition to already calculated coefficients, a repeated selection of a next coefficient is performed until a stop criterion is met, for which next coefficient the calculation cost is minimal compared to other possible coefficients which are not yet calculated. In this embodiment ‘on-the-fly’ computation is possible, wherein the calculation is stopped when a computation limit or a certain time period has been reached. The algorithm can be reprogrammed to process the calculation steps in this specific order until a (time) limit is reached. Within this (time) limit, results can be updated from time to time. The algorithm is now independent of the computer system used, which can have an arbitrary computation power. The algorithm will calculate as many coefficients as possible within the given (time) limit and possible other constraints. Also in this embodiment ~~the~~, the calculation cost is preferably at least partly based on the amount of calculation steps required to calculate the next coefficient reduced with an amount of calculation steps that are shared between the calculating of the

next coefficient and calculation steps already performed for already calculated coefficients.

Kindly replace paragraph [0034] with the following:

[0034] Most known DCT algorithms are designed for maximal video quality. Different strategies can be found to reduce the complexity of the DCT computation by mathematical transformations of Equation (1) or (2): Lee and Huang [1] reduce the calculation of the cosine matrix to equivalent sub-problems of a lower complexity. They normalize each angle ~~angel~~ α of the cosine matrix to $0 \leq \alpha < 0.57\pi$ and therefore a $2^n \times 2^n$ -DCT is reduced to $2^{n-1} \times 2^{n-1}$ -DCT's of lower complexity. Cho and Lee [2] found data dependencies between two cosine matrixes given in Equation (1) to represent one of the matrixes as function of the other matrix. Therefore, the 2D-transformation has been reduced to a 1D-transform, where the selection of the 1D-DCT algorithm is free of choice. Arai, Agui and Nakajima [3] deduce the DCT from a Discrete Fourier Transform (DFT), where several ~~multiplication's~~ multiplications can be absorbed in later quantization step.

coefficients.

Kindly replace paragraph [0035] with the following:

[0035] Further, algorithms are known which reduce the computation complexity of the DCT to speed up calculation time, whereby a loss of video quality is accepted: Merhav and Vasudev [4] developed a calculation scheme for DCT and inverse DCT (IDCT). The main idea is to exchange all multiplications with shift operations and compensate the resulting error as good as possible in a later quantization step with no additional cost. Pao

and Sun [5] made statistical analysis of encoding different video sequences with the video coding standard H.263. This coding standard saves an image block after the calculation of the DCT in a zigzag order as shown in FIG. 2, until all non-zero values have been saved. The remaining zeros are replaced by an end-of-block (EOB) sign. From the analysis, variances of the DCT coefficients can be represented as a function of the minimum mean absolute error (MMAE), which is taken after a motion-compensated prediction. Depending on this function and the quantization parameter of video coding standard H.263, thresholds have been measured to process an image block in different ways. Either the DCT is calculated for all 64 coefficients, or for an approximate 4.times.4 low frequency DCT, or for the upper left coefficient (the value only, or the DCT is not performed at all).

Kindly replace paragraph [0054] with the following:

[0054] The receiver 4 comprises a decoder 40. The video decoder 40 comprises an input unit 403, a calculation unit 401 and a memory [[403]] 402. The input unit receives a coded video signal S2' from the communication channel or storage medium 3. The coded video signal S2' will normally be identical to the signal S2, although S2' may contain errors introduced by the communication channel or storage medium 3. The input unit 403 may perform operations like variable length decoding, demultiplexing and channel decoding, normally inversely to the operations performed in the output unit 203. The calculation unit 401 performs an inverse transformation to calculate pixel values from the received transform coefficients. The pixel values are included in an output signal S1' which is a reduced quality version of the video source signal S1. The output signal S1' is displayed on the display unit 5.